Table 2.1.Summary Table: Validation Studies on Pregnant Women

	Sample Size	Reference Method					Racial Ethnic					Includes Low SES	Supplement Intake Assessment Method	Results
		TEE by DLW Method	Other Biomarkers	Weighed FR	Estimated FR	24-Hour Recall	Caucasian	AfricanAmerican	Hispanic	Asian	Other			
Total Energy Expenditure (TEE) by Doubly Labeled Water (DLW) Method														
Goldberg et al., 1993 (14)	12			7d			✓							6-23% under reporting by FR
Forsom et al., 1992 (15)	22			4d			✓						NS*	27% under reporting by FR
Diet History														
Tapsell et al., 2002 (16)	33			7d			✓						NS	Non-significant differences
24HR														
Klebanoff et al., 1998 (17)	239		✓			1							NS	Serum caffeine and paraxanthin correlated significantly with 24HR intake of caffeine at <26wks.
FFQ														
Parra et al., 2002 (18) 104-item semi quantitative interviewer administered FFQ, Mexico City	35		✓						✓			✓	NS	Erythrocyte PUFA correlated significantly with dietary intake of PUFA.
DeVriese et al., 2001 (19) 181-item semi quantitative interviewer administered FFQ, Belgium	26			7d			✓						NS	Correlation between FFQ and 7dFR total fat, PUFA, MUFA, and EFA all above 0.6. 83 % classified in same quartile by both methods.
Erkkola et al., 2001 (20) 181-item semi quantitative self administered FFQ, Finland	113			10d			✓							FFQ overestimated foods by 36-38%; 69% classified into same or adjacent quintiles
Rifas-Shiman et al., 2000 (21) Self administered, modified, semi-quantitative Harvard FFQ	185		✓				✓	✓					NS	Correlation between FFQ and serum N-3 fatty acids, trans fatty acids, and alpha-linolenic fatty acids 0.98, 0.75 and 0.07 in whites and 0.98, 0.57 and 0.07 in blacks.

*NS = Not Specified

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FFQ														
Brown et al., 1996 (22) Self-administered, modified, semi-quantitative Harvard FFQ	56			4d			✓						NS	FFQ underestimated EI by 10%. Correlation greater than 0.5 for 7 of 15 nutrients.
Robinson et al., 1996 (23) 100-item, semi-quantitative, interviewer-administered	569		✓		4d		✓						FFQ 4d FR	FFQ overestimated EI by 23.5%. Both FFQ and 4dFR were correlated with fasting serum Vitamin C (0.227 FFQ) and 0.38 FR, both p< 0.001).
Forsythe et al., 1994 (24) 82-item self administered, modified semi-quantitative, Harvard FFQ	80					3		✓			✓		NS	FFQ overestimated EI by 34%. Protein, CHO, fat, calcium iron, zinc, and alcohol estimates all significantly higher on FFQ (p<.05)
FNS, USDA, 1994 (25) Harvard FFQ in half of sample, HHHQ in half of sample, self-admin.	150					4	✓	✓	✓			✓	NS	Correlation between FFQ and 24HR higher with HHHQ than HFFQ for kcal, protein, Fe, Ca, and Vitamin A and C.
Greeley et al., 1992 (26) 116-item, self-administered Harvard FFQ 2 times	50					4							NS	FFQ overestimated EI by non-significant 7% in 2nd and 3rd trimester. CHO, Fe, Ca, Vitamin C, and folacin all overestimated by HFFQ.
Suitor et al., 1989 (27) 111-item self-administered, semi-quantitative modified Harvard FFQ twice	295					3 (n=95)	✓	✓	✓				FFQ	HFFQ overestimated EI by 13%. HFFQ could correctly identify a high proportion of women having low intake of selected nutrients.
Wei et al., 1999 (further analysis of data collected by Suitor) (28)	101					1-3	✓	✓	✓				FFQ	Mean correlation between HFFQ and 24HR for 17 nutrients = 0.47; 54% >0.4.

*NS = Not Specified